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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
MARTINEZ, DAVID E	
ART UNIT	PAPER NUMBER
2181	

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/612,760

Applicant(s)

CHEN ET AL.

Examiner

David E. Martinez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 1-11, 17-22, 26-28 and 38-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-16, 23-25 and 29-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/30/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
FRITZ FLEMING  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. 10/16/2006
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION*****Election/Restrictions***

Applicant's election with traverse of species 3 (claims 12-16 and new claims 29-37) in the reply filed on 9/12/06 is acknowledged. The traversal is on the ground(s) that the analysis for restriction must show that (A) the inventions must be independent or distinct; (B) there must be serious burden on the examiner; and that the restriction is improper since the elements of claim 12 are found in claim 25, where the elements of these claims are not mutually exclusive. The same was said for the elements of claim 17 which are found in claim 28 (both claims not mutually exclusive, both claims now withdrawn). Applicant's arguments are persuasive as to the lack of exclusivity between Species 3 and Species 5 (claims 23-25). Accordingly, Species 3 and species 5 are being examined together. For the same reasons, species 4 and 6 are a species by themselves as well, however, they are now withdrawn and thus are not examined for the reasons below.

Species 3 and 5 are is still deemed independent or distinct from species 1-2, 4 and 6 due to their different features in the alternative embodiments as disclosed in the previous office action which would require a diverging field of search. As per the reasons stated above, species 3 and 5 are being treated on their merits.

The Examiner would also like to note that the addition of claims 38-40 which ultimately depend from claim 17, are not examined since claim 17 has been withdrawn by the Applicant.

The requirement is still deemed proper and is therefore made FINAL.

***Drawings***

The drawings are objected to because figures 1-3 and 5 appear to have faded bus lines and faded elements and thus are hard see. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application.

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Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 23-25 and 35-37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. With regards to claim 23, the term "a transmitter coupled to the rate match pattern generator to puncture first data..." in line 2, renders the claim indefinite since it's not clear what element is puncturing the first data, is it the transmitter or the rate matcher pattern generator?. Also, the term "a receiver coupled to the rate matcher pattern generator to delete second repeated data..." in line 4 also renders the claim indefinite for similar reasons. It is not clear if it's the receiver or the rate matcher pattern generator element that deletes second repeated data.

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2. With regards to claims 24-25, due to their dependency from claim 23, they suffer from the same deficiencies and thus they are rejected under the same rationale.

3. With regards to claim 35, the term "a transmitter coupled to the rate match pattern generator to repeat first data..." in line 2, renders the claim indefinite since it's not clear what element is repeating the first data, is it the transmitter or the rate matcher pattern generator? Also, the term "a receiver coupled to the rate matcher pattern generator to delete second repeated data..." in line 4 also renders the claim indefinite for similar reasons. It is not clear if it's the receiver or the rate matcher pattern generator element that deletes second repeated data.

4. With regards to claims 35-37, due to their dependency from claim 35, they suffer from the same deficiencies and thus they are rejected under the same rationale.

5. With further regards to claim 37 recites the limitation "the system" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Due to the vagueness and a lack of clear definiteness in the claims, the claims have been treated on their merits as best understood by the examiner.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12-16 and 29-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,397,367 to Parks et al. (hereinafter Parks) in view of US Patent No. 7,082,565 to Michel et al. (hereinafter Michel).

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6. With regards to claim 12, Parks teaches an apparatus [figs 11 and 12, column 9 lines 44-46 shows how both figures are part of a same "communication system"], comprising:

a rate matcher [fig 11 element 1104] pattern generator having a repeat transmission mode (an operational mode) [column 8 lines 54-60, note that fig 11 is directed to the transmitting side so having a "repeat transmission mode"]. Park also teaches a distinct rate matcher [fig 12 element 1205] being used during a reception mode for the communication system (the apparatus). Parks teaches all of the above limitations but is silent as to the rate matcher pattern generator also having an operational mode being a depuncture (insert) reception mode. However, Michel teaches a rate matcher pattern generator [fig 1 element 6] having a depuncture reception mode selectable from among other modes, for the benefit of having a rate matcher generator match a transmission rate for communication to take place between different radio apparatuses during transmission mode and reception mode [column 2 line 61 to column 3 line 12 and column 6 lines 38-53].

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Parks and Michel to have the rate matcher pattern generator be selectable from a depuncture reception mode among one of the operational modes in addition to the operational modes it already supports in order to be able to support additional modes by a single rate matcher pattern generator for the benefit of having the rate matcher pattern generator match a transmission rate for communication to take place between different radio apparatuses both during a transmission mode and a reception mode. – [Please note that due to the combination, the integration of both modes into one rate matcher pattern generator allows for its use during both the transmission mode and the reception mode of the apparatus instead of using independent rate matcher pattern generators thus the rate matcher pattern generators

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1104, 1113, 1205 and 1215 can be substituted by an single integrated rate matcher pattern generator having the multiple modes]

7. With regards to claim 13, Parks teaches the apparatus of claim 12, further comprising:  
a multiplexer [fig 11 element 1105] coupled to the rate matcher pattern generator to select between input data and repeated data [column 9 lines 37-38].

8. With regards to claim 14, Parks teaches the apparatus of claim 13, further comprising:  
a wireless transmitter [fig 11 element 1108] coupled to the multiplexer [fig 11 element 1105] to transmit the repeated data [column 9 lines 42-43].

9. With regards to claim 15, Parks teaches the apparatus of claim 12, further comprising:  
a multiplexer [fig 12 element 1205] coupled to the rate matcher pattern generator to select between input data and depunctured data [column 9 lines 44-53].

10. With regards to claim 16, Parks teaches the apparatus of claim 15, further comprising:  
a wireless receiver [fig 12 element 1201] coupled to the multiplexer to provide the input data [column 9 lines 44-53].

11. With regards to claim 29, Parks teaches the apparatus of claim 12, wherein the rate matcher pattern generator is configurable to operate in at least one of a delete reception mode [column 9 lines 44-58] and a puncture transmission mode [fig 11 element 1104 column 8 lines 54-60].

12. With regards to claim 30, Parks teaches the apparatus of claim 12, wherein the rate matcher pattern generator [fig 11 element 1104] can be configured to include a state machine to implement a rule-based standard [column 8 line 61 to column 9 line 8 shows element 1104 being a state machine implementing a rule-based standard].

13. With regards to claim 32, Parks teaches the apparatus of claim 29 further comprising:

a wireless transmitter [fig 11 element 1108] coupled to the rate matcher pattern generator [fig 1104] to transmit punctured data provided in the puncture transmission mode [column 8 line 54 to column 9 line 8 and lines 37-43].

14. With regards to claim 33, Parks teaches the apparatus of claim 32, further comprising:  
a first-in first-out memory [fig 11 elements 1106 and 1107] coupled to the rate matcher pattern generator [fig 11 elements 1104, 1113] and to the wireless transmitter [fig 11 element 1108], the first-in first-out memory to store the punctured data [column 8 line 54 to column 9 line 8 and lines 37-43. the flow of punctured data among the different elements including elements 1106, 1107 which operate on the data itself have fifo memories to buffer the data while operating on it].
15. With regards to claim 34, Parks teaches the apparatus of claim 29, further comprising:  
a wireless receiver [fig 12 element 1201] coupled to the rate matcher pattern generator [fig 1205] to provide input data in the delete reception mode [column 9 lines 44-58].
16. With regards to claim 35, the apparatus of claim 12, comprising:  
a transmitter [fig 11] coupled to the rate matcher pattern generator [fig 1104] to repeat first data to provide first repeated data [column 8 line 54 to column 9 line 8 and lines 37-43]; and  
a receiver [fig 12] coupled to the rate matcher pattern generator [fig 1104] to delete second repeated data to provide second data according to a programmed standard included in the rate matcher pattern generator and selected from a plurality of reprogrammable standards [column 9 lines 44-58].

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,397,367 to Parks et al. (hereinafter Parks) in view of US Patent No. 7,082,565 to Michel et al. (hereinafter Michel). and further in view of US Patent No. 6,788,657 to Freiberg et al. (hereinafter Freiberg).

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17. With regards to claim 31, the combination of Parks and Michel are silent as to the apparatus of claim 12, wherein the rate matcher pattern generator can be configured to include a look up table to implement a table-based standard. However, Freiberg teaches rate matching configured to include a look up table to implement a table-based standard for the benefit of selectively providing a particular way that can be later changed for the rate matcher pattern generator to calculate values of the bits to be punctured or repeated [see abstract, column 2 lines 13-23].

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Parks, Michel and Freiberg to have the rate matcher pattern generator be configured to include a look up table to implement a table-based standard for the benefit of selectively providing a particular way that can be later changed for the rate matcher pattern generator to calculate values of the bits to be punctured or repeated.

Claims 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,397,367 to Parks et al. (hereinafter Parks) in view of US Patent No. 7,082,565 to Michel et al. (hereinafter Michel). and further in view of US Patent No. 6,369,771 to Chiang et al. (hereinafter Chiang).

18. With regards to claim 36 and 37, the combination of Parks and Michel teaches a transmitter [fig 11] and a receiver [fig 12] for CDMA communication to take place in a wireless environment, but the combination is silent as to the the apparatus of claim 35, comprising:

a dipole antenna to couple to the receiver and to wherein the dipole antenna is to couple to the transmitter. However, Chiang teaches the use of a dipole antenna to couple to a receiver and a transmitter of a CDMA apparatus for the benefit of providing an inexpensive low profile antenna that can differentiate its ability to detect a signal on one direction versus detection of

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the same or a different signal coming from another direction [column 2 lines 13-23 and column 1 lines 38-45].

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Parks, Michel and Chiang to have the apparatus comprise a dipole antenna to couple to the receiver and to wherein the dipole antenna is to couple to the transmitter for the benefit of providing an inexpensive low profile antenna that can differentiate its ability to detect a signal on one direction versus detection of the same or a different signal coming from another direction.

Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,397,367 to Parks et al. (hereinafter Parks) in view of US Patent No. 7,082,565 to Michel et al. (hereinafter Michel). and further in view of US Patent No. 6,369,771 to Chiang et al. (hereinafter Chiang).

19. With regards to claim 23. a system [fig 11 and 12, column 9 lines 44-46, a system having both a transmitter part and a receiver part], comprising:

reconfigurable logic [see the apparatus having the rate matcher patter generator of claim 1 above and for the same reasons];

a transmitter [fig 11] coupled to the reconfigurable logic to repeat first data to provide first repeated data [column 8 line 54 to column 9 line 8 and lines 37-43];

a receiver [fig 12] coupled to the reconfigurable logic to delete second repeated data to provide second data according to a programmed standard included in the reconfigurable logic and selected from a plurality of reprogrammable standards [column 9 lines 44-58]; and

a dipole antenna to couple to the receiver [see claim 36 rejection above and for the same reasons].

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20. With regards to claim 24. The system of claim 23, wherein the dipole antenna is to couple to the transmitter [see claim 37 rejection above and for the same reasons].

21. With regards to claim 25. The system of claim 23, wherein the reconfigurable logic comprises:

a rate matcher pattern generator configurable to operate in a mode selectable between a repeat transmission mode and a depuncture reception mode [see the apparatus having the rate matcher pattern generator of claim 1 above and for the same reasons].

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure dealing with rate matching or having rate matchers that insert, repeat, puncture or depuncture data:

US Patent Application Publication No. US 2005/0141549 A1 to Dottling et al.

US Patent No. 5,436,918 to Kato et al.

US Patent Application Publication No. US 20040221222A1 to Barry et al.

US Patent Application Publication No. US 20040091067A1 to Ammer et al.

US Patent Application Publication No. US 20030091003A1 to Wang et al.

US Patent No. 5,416,787 to Kodama et al.

US Patent Application Publication No. US 2002/0027956 A1 to Lee et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Martinez whose telephone number is (571) 272-4152. The examiner can normally be reached on 8:30-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fritz M. Fleming can be reached on 571-272-4145. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DEM

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